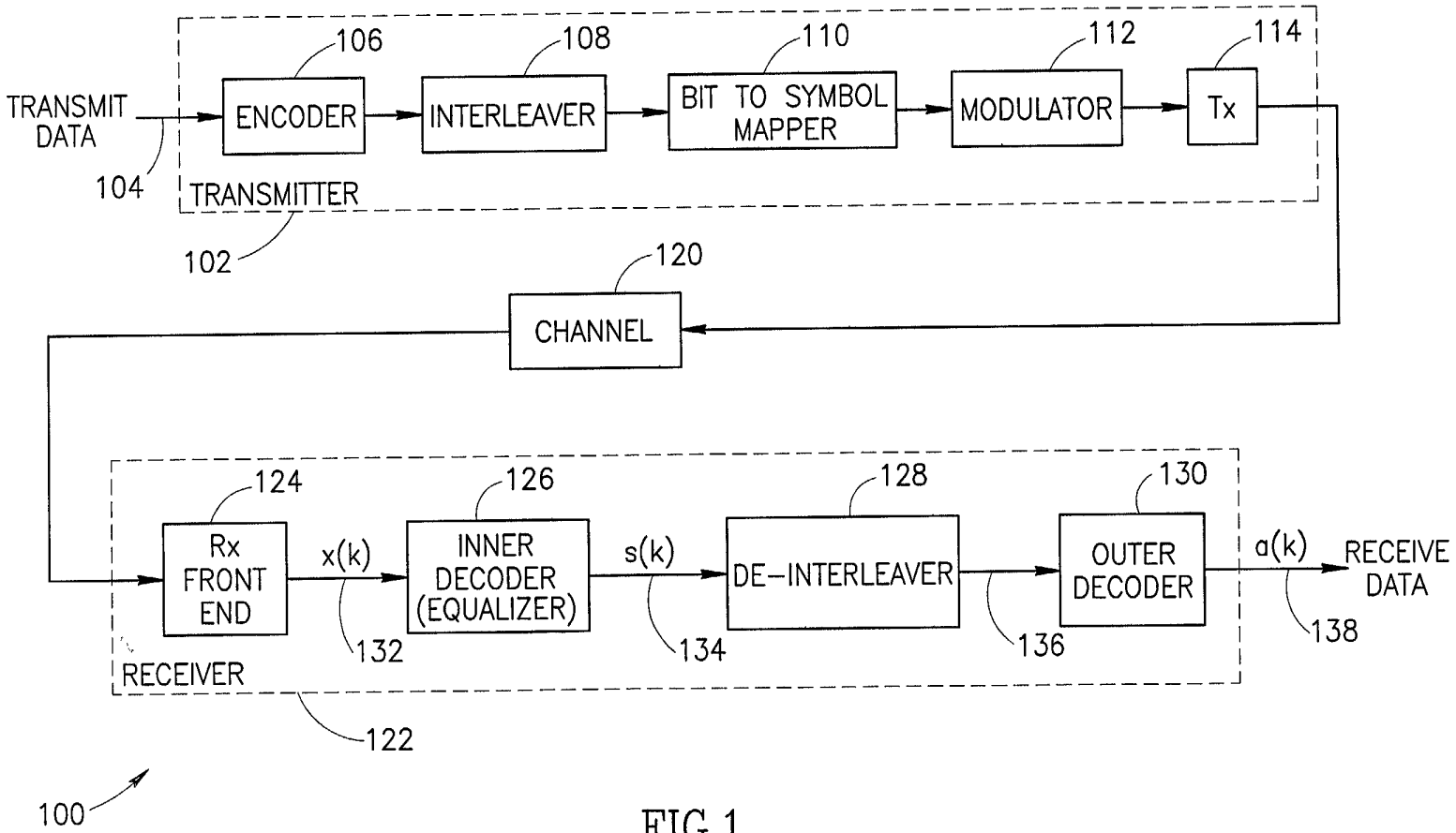

FIG.1

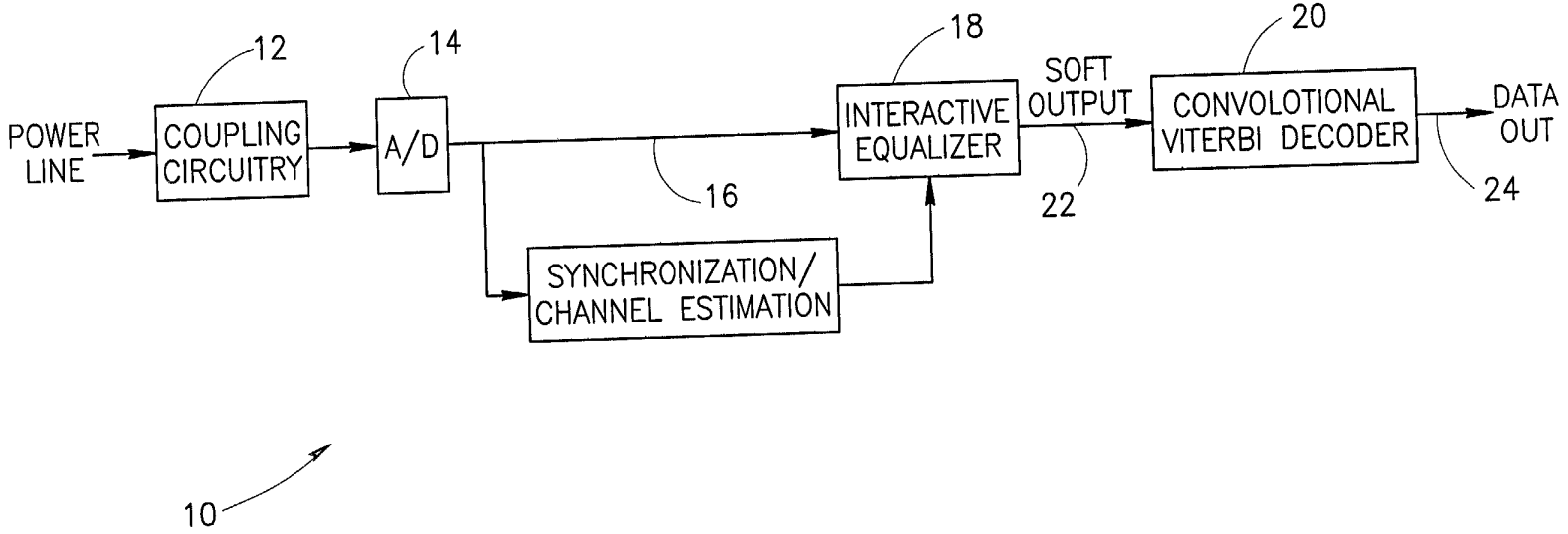
POWER LINE
COUPLING CIRCUITRY
12
A/D
14
16
INTERACTIVE EQUALIZER
18
SOFT OUTPUT
22
CONVOLOTIONAL VITERBI DECODER
20
DATA OUT
24
SYNCHRONIZATION/ CHANNEL ESTIMATION
10

FIG.2

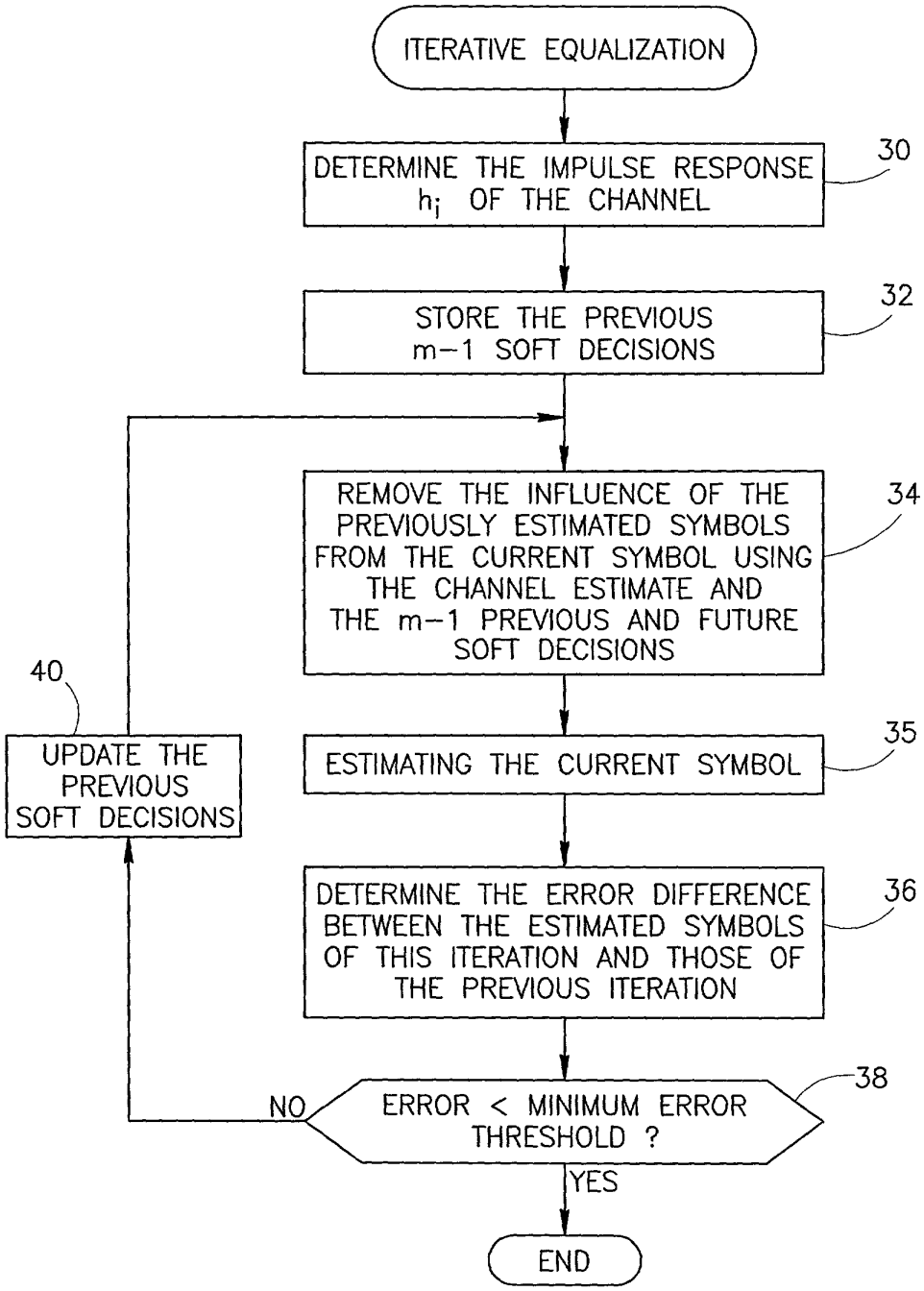
ITERATIVE EQUALIZATION
DETERMINE THE IMPULSE RESPONSE h_j OF THE CHANNEL
30
STORE THE PREVIOUS m−1 SOFT DECISIONS
32
REMOVE THE INFLUENCE OF THE PREVIOUSLY ESTIMATED SYMBOLS FROM THE CURRENT SYMBOL USING THE CHANNEL ESTIMATE AND THE m−1 PREVIOUS AND FUTURE SOFT DECISIONS
34
ESTIMATING THE CURRENT SYMBOL
35
DETERMINE THE ERROR DIFFERENCE BETWEEN THE ESTIMATED SYMBOLS OF THIS ITERATION AND THOSE OF THE PREVIOUS ITERATION
36
ERROR < MINIMUM ERROR THRESHOLD ?
38
NO
YES
UPDATE THE PREVIOUS SOFT DECISIONS
40
END

FIG.3

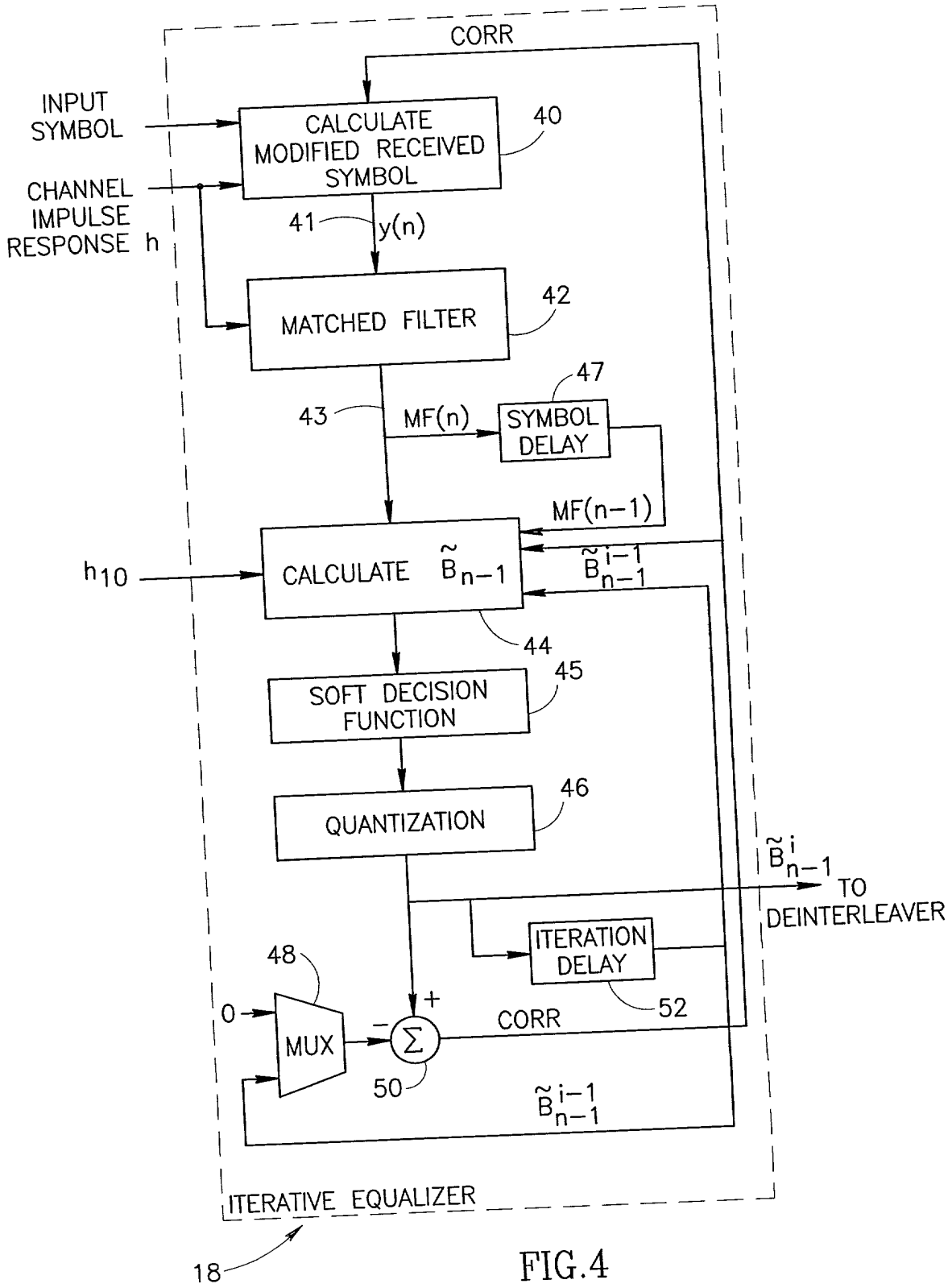
CORR
INPUT SYMBOL
CHANNEL IMPULSE RESPONSE h
CALCULATE MODIFIED RECEIVED SYMBOL
40
41
y(n)
MATCHED FILTER
42
47
43
MF(n)
SYMBOL DELAY
MF(n-1)
h10
CALCULATE $\tilde{B}_{n-1}$
$\tilde{B}^{i-1}_{n-1}$
44
SOFT DECISION FUNCTION
45
QUANTIZATION
46
$\tilde{B}^{i}_{n-1}$
TO DEINTERLEAVER
ITERATION DELAY
52
48
0
MUX
+
−
Σ
CORR
50
$\tilde{B}^{i-1}_{n-1}$
ITERATIVE EQUALIZER
18

FIG.4

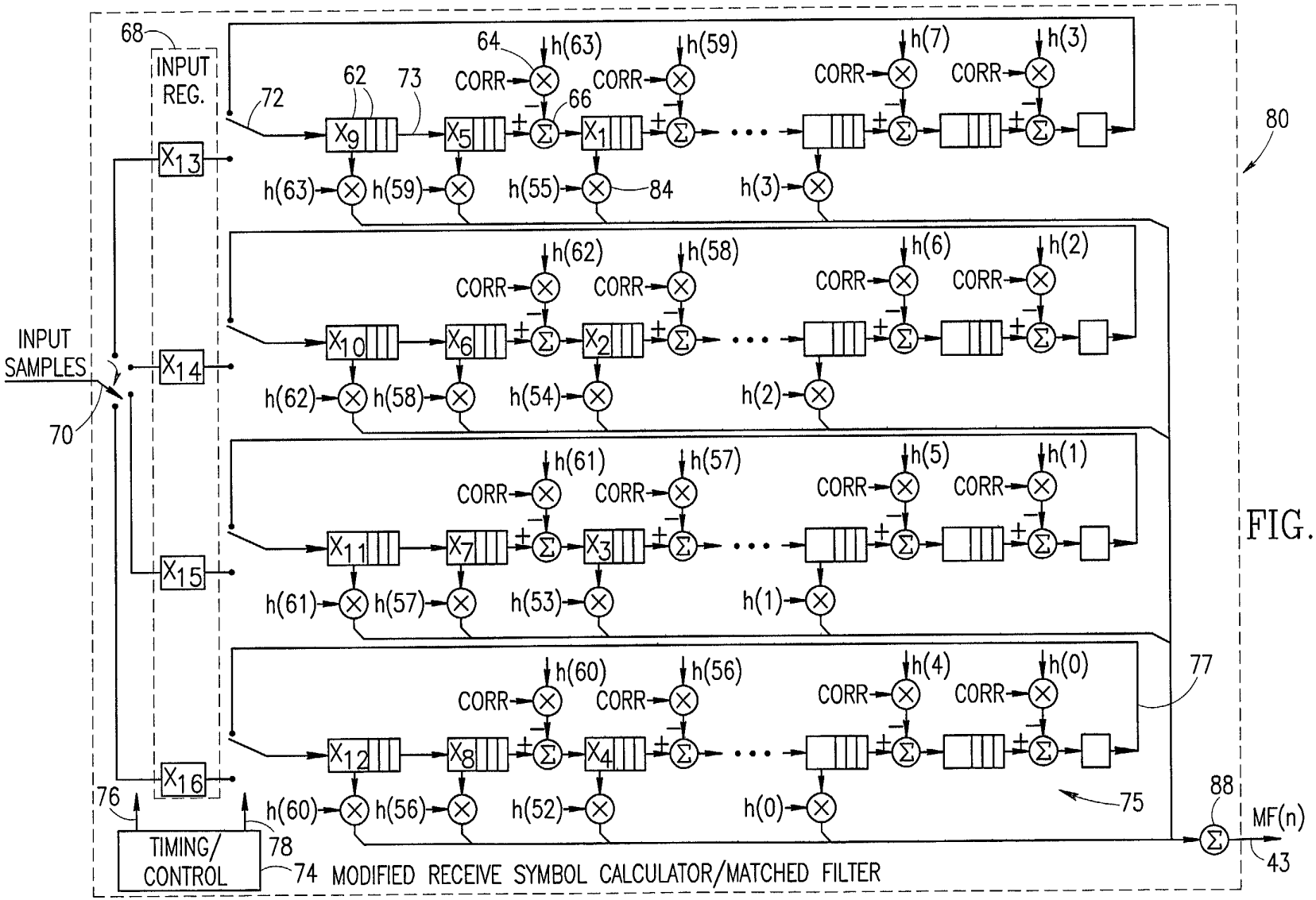
68
INPUT REG.
72
62
73
64
h(63)
h(59)
h(7)
h(3)
CORR
66
80
X13
X14
X15
X16
X9
X5
X1
h(63)
h(59)
h(55)
84
h(3)
h(62)
h(58)
h(6)
h(2)
X10
X6
X2
h(62)
h(58)
h(54)
h(2)
INPUT SAMPLES
70
h(61)
h(57)
h(5)
h(1)
X11
X7
X3
h(61)
h(57)
h(53)
h(1)
h(60)
h(56)
h(4)
h(0)
77
X12
X8
X4
h(60)
h(56)
h(52)
h(0)
75
76
78
88
MF(n)
43
TIMING/ CONTROL
74 MODIFIED RECEIVE SYMBOL CALCULATOR/MATCHED FILTER

FIG.5

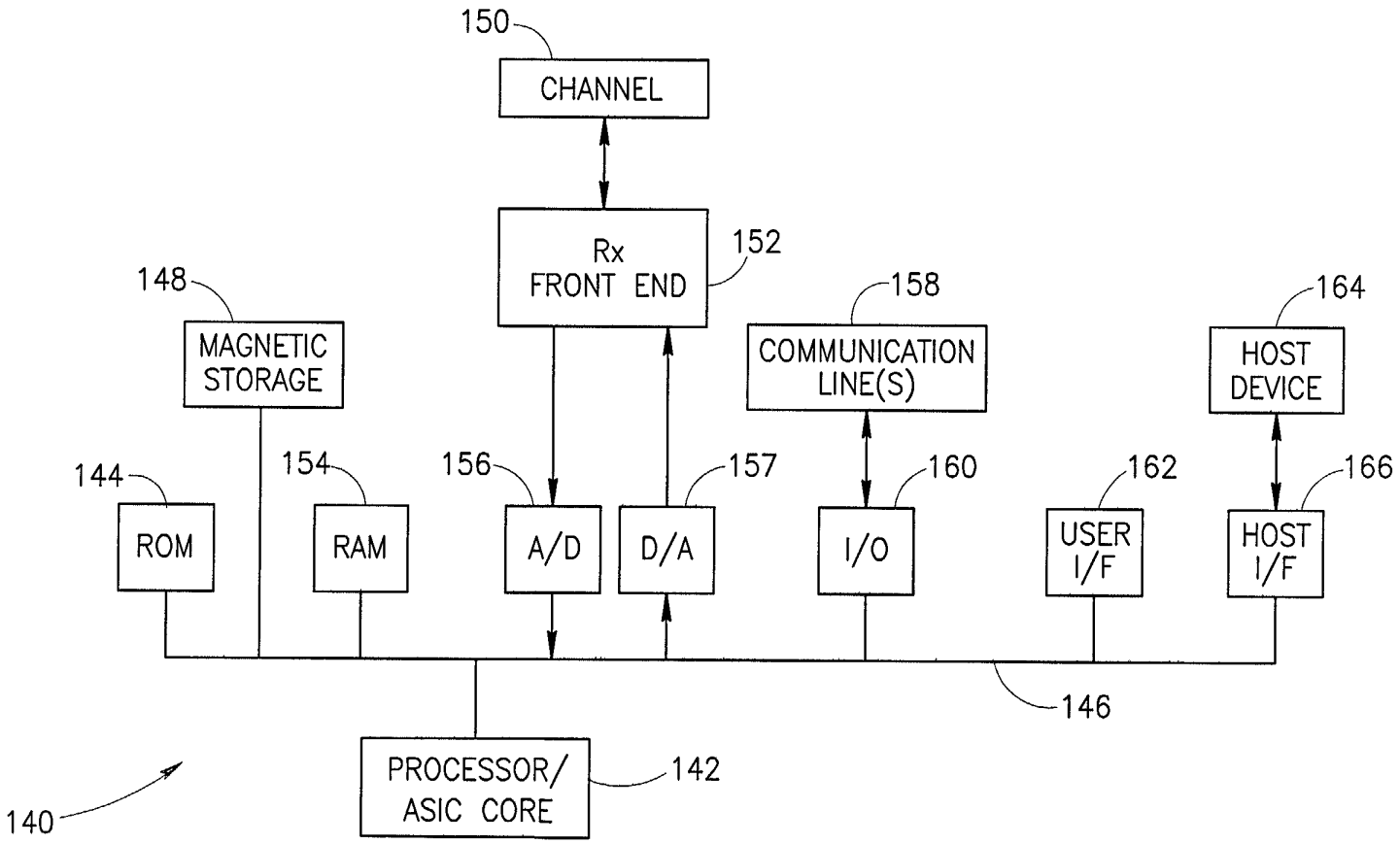

FIG.6